

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A roof structure for covering a roof substrate, comprising:

a roof substrate having an upper surface;

a waterproof membrane having an upper side and a layer of fleece material disposed on a lower side ~~that is substantially free of fleece material of said waterproof membrane;~~

a moisture curing substantially non-volatile polyether-based adhesive comprising a silyl-terminated polymer disposed on at least a portion of said lower side, ~~wherein at least some of said adhesive is disposed within said fleece material and contacts~~ of said waterproof membrane in contact with said upper surface of said roof substrate and thereby ~~bonds~~ bonding said waterproof membrane to said roof substrate to define a portion of a low slope roof of a building structure.

Claim 2 (currently amended): The roof structure of claim 1, wherein:

~~said adhesive is a moisture-cured polyether-based adhesive~~ silyl-terminated polymer comprises a silyl-terminated polyether.

Claim 3 (currently amended): The roof structure of claim 2 1, ~~wherein~~ including:

said waterproof membrane comprises a layer of PVC material.

a metal, concrete, or wood deck; and

a layer of insulation on said deck forming said roof substrate; ~~said waterproof membrane adhesively bonded to said insulation by parallel beads of said adhesive.~~

Claim 4 (currently amended): The roof structure of claim 3 1, wherein:

said waterproof membrane comprises a layer of EPDM rubber.

Claim 5 (currently amended): A roof deck structure, comprising:

a rigid low slope roof structure adapted to be supported at least in part by the walls of a building, said low slope roof structure having a roof substrate defining an upper surface;

a waterproof membrane having an upper side and a lower side ~~a layer of fleece material disposed on a lower side thereof~~;

a moisture curing ~~substantially non-volatile polyether~~ silyl-terminated polymer based adhesive disposed on at least a portion of said lower side in contact with said upper surface of said roof substrate, ~~at least some of said adhesive disposed within said fleece material and~~ bonding said waterproof membrane to said upper surface of said roof substrate.

Claim 6 (currently amended): The roof deck structure of claim 5, wherein:

said adhesive polymer comprises a silyl-terminated polyether ~~is a moisture-cured adhesive~~.

Claim 7 (currently amended): The roof structure of claim 6 ~~5~~, wherein:

said waterproof membrane has comprises a layer of EPDM rubber ~~that does not include fleece backing material~~.

Claim 8 (currently amended): A roof deck structure, comprising:

a rigid low slope roof structure including a roof substrate having an upper surface;
a waterproof flexible membrane covering said roof substrate, and defining a lower surface;

a moisture curing substantially non-volatile adhesive comprising a silyl-terminated polymer in contact with the upper surface of the roof substrate and the lower surface of the flexible membrane to thereby bond the flexible membrane to the roof substrate.

Claim 9 (currently amended): The roof deck structure of claim 8, wherein:

the adhesive comprises a silyl-terminated polyether based adhesive.

Claim 10 (previously presented): The roof deck structure of claim 9, wherein:
the flexible membrane includes a layer of fleece matting on one side; and wherein:
at least a portion of the adhesive is disposed in the fleece.

Claim 11 (previously presented): The roof deck structure of claim 10, wherein:
the flexible membrane comprises a layer EDPM rubber having a thickness of about
0.040-0.070 inches thick.

Claim 12 (previously presented): The roof deck structure of claim 11, wherein:
the fleece matting has a thickness of about 0.040-0.080 inches.

Claim 13 (previously presented): The roof deck structure of claim 8, wherein:
the flexible membrane is bonded to the roof substrate and has a bond strength of at least
one hundred sixty-five pounds per square foot.

Claim 14 (currently amended): The roof deck structure of claim 13, wherein:
the adhesive has a viscosity prior to curing of about 200,000 to 300,000 centipoise.

Claim 15 (previously presented): The roof deck structure of claim 8, wherein:
the roof substrate comprises fiberglass reinforced gypsum board.

Claim 16 (previously presented): A roof deck structure, comprising:
a rigid low slope roof structure including a roof substrate comprising fiberglass
reinforced gypsum board;
a waterproof flexible membrane covering said roof substrate;
a moisture curing substantially non-volatile adhesive disposed between the roof
substrate and the flexible membrane to thereby bond the flexible membrane to the roof
substrate; and wherein:

the roof deck structure includes a layer of foam insulation below the fiberglass reinforced gypsum board.

Claim 17 (currently amended): A roof deck structure, comprising:

- a rigid low slope roof structure including foam insulation forming a roof substrate;
- a waterproof flexible membrane covering said roof substrate;
- a moisture curing substantially non-volatile adhesive disposed between the roof substrate and the flexible membrane to thereby bond the flexible membrane to the roof substrate; and
- a fluted steel deck below the foam insulation; and
- moisture curing adhesive bonding the foam insulation to the steel deck without the use of mechanical fasteners.

Claim 18 (previously presented): The roof deck structure of claim 17, including:
moisture curing adhesive bonding the foam insulation to the steel deck.

Claim 19 (previously presented): The roof deck structure of claim 8, wherein:
the adhesive includes a silyl-terminated polymer.

Claim 20 (previously presented): The roof deck structure of claim 8, wherein:
the adhesive includes an oxyalkylene polymer having at least one reactive silyl group at each end of the polymer molecule.

Claim 21 (new): A roof deck structure, comprising:
a fluted steel deck having a plurality of elongated upper deck surfaces;
a substantially rigid panel disposed on the steel deck, the panel defining upper and lower surfaces;

moisture-curing adhesive disposed between the steel deck and the substantially rigid panel in contact with the upper deck surfaces and the lower surface of the substantially rigid panel; and

a flexible waterproof membrane disposed above the substantially rigid panel.

Claims 22 (new): The roof deck structure of claim 21, wherein:
the substantially rigid panel comprises insulation board.

Claim 23 (new): The roof deck structure of claim 22, including:
a layer of fiberglass reinforced gypsum board disposed between the insulation board and the waterproof membrane.

Claim 24 (new): The roof deck structure of claim 23, including:
moisture curing adhesive adhesively securing the fiberglass reinforced gypsum board to the insulation board.

Claim 25 (new): The roof deck structure of claim 23, including:
moisture curing adhesive securing the waterproof membrane to the fiberglass reinforced gypsum board.

Claim 26 (new): The roof deck structure of claim 21, wherein:
the waterproof membrane comprises a fleece-backed material.

Claim 27 (new): The roof deck structure of claim 21, wherein:
the waterproof membrane comprises a fleece-backed PVC material.